

Appendix 2

Recommended Pollution Control Clauses for Construction Contracts



APPENDIX 2
RECOMMENDED POLLUTION CONTROL CLAUSES
for CONSTRUCTION CONTRACTS

The following Recommended Pollution Control Clauses (RPCC) are generally good engineering practices to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. These RPCC should be included in the Construction Contract for the Contractor(s) to follow.

1. GENERAL

- 1.1 The Contractor shall undertake environmental protection measures to reduce the environmental impacts arising from the execution of the Works. In particular, the Contractor shall arrange his method of working to minimise the effects on the air, noise, water quality as well as nuisance of waste within and outside the Site, on transport routes and at the loading, dredging and dumping areas.
- 1.2 The Contractor shall observe and comply with relevant environmental protection and pollution control ordinances. The Contractor shall maintain on site, and provide one copy for the Engineer, with copies of the relevant enacted ordinances and their regulations, which shall include but not be limited to the following :
- (a) Air Pollution Control Ordinance (Cap 311);
 - (b) Waste Disposal Ordinance (Cap 354);
 - (c) Water Pollution Control Ordinance (Cap 358);
 - (d) Noise Control Ordinance (Cap 400);
 - (e) Dumping at Sea Ordinance (Cap 446);
 - (f) Environmental Impact Assessment Ordinance (Cap 499);
 - (g) Factories and Industrial Undertakings Ordinance (Cap 59);
 - (h) Public Health and Municipal Services Ordinance (Cap 132);
 - (i) Public Cleansing and Prevention of Regulation (Cap 132);
 - (j) Summary Offences Ordinance (Cap 228);
 - (k) Merchant Shipping (Oil Pollution) (Hong Kong) Order 1975;
 - (l) Waste Disposal (Chemical Waste) (General) Regulation;
 - (m) Air Pollution Control (Open Burning) Regulation;
 - (n) Air Pollution Control (Construction Dust) Regulation;
 - (o) Air Pollution Control (Furnaces Ovens and Chimneys) Installation and Alteration Regulation.

- 1.3 The Contractor shall design, construct, operate and maintain pollution control measures to ensure compliance with the contract provisions as well as the environmental ordinances and their regulations. The Contractor shall also conduct compliance monitoring following a programme as agreed with the Engineer, and submit the monitoring results to the Engineer.
- 1.4 General mitigation measures shall include, but not be limited to the following:
- (a) The Contractor shall take every precaution to prevent earth, rock or debris from depositing on public or private rights of way as a result of the Contractor's operations including any deposits arising from the movement of plant or vehicles. In the event of any earth, rock or debris from construction works being deposited on public or private rights of way then all such earth, rock or debris shall be immediately removed and the affected rights of way restored to their original state by the Contractor to the satisfaction of the Engineer.
 - (b) In the event of any spoil or debris from construction works being deposited on adjacent land or seabed or any silt washed down to any area, then all such spoil, debris or material and silt shall be immediately removed and the affected land or seabed and areas restored to their natural state by the Contractor to the satisfaction of the Engineer.
- 1.5 The Contractor shall make due allowance in the Contractor's rates and in the Contractor's programme for the carrying out of the Works in compliance with the environmental protection control requirements under the Contract.

2. WATER POLLUTION CONTROL

2.1 Water Pollution Control - General Requirements

- 2.1.1 The Contractor shall observe and comply with the Water Pollution Control Ordinance and its subsidiary regulation.
- 2.1.2 The Contractor shall carry out the Works in such a manner as to minimise adverse impacts on the water quality during execution of the works. In particular the Contractor shall arrange the method of working to minimise the effects on the water quality within and outside the Site, on the transport routes.
- 2.1.3 The Contractor shall follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 "Construction Site Drainage" issued by the

Director of Environmental Protection. The design of the mitigation measures shall be submitted by the Contractor to the Engineer for approval.

2.2 Surface Runoff

2.2.1 The Contractor shall contain within the Site all surface runoff generated from foundation works, dust control and vehicle washing, etc.

2.3 Discharge into Sewers and Drains

2.3.1 The Contractor shall not discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water without the prior written consent of the Engineer in consultation with the Director of Environmental Protection and Director of Water Supplies, who may as a condition of granting the consent require the Contractor to provide, operate and maintain at the Contractor's own expense to the satisfaction of the Engineer suitable works for the treatment and disposal of such trade effluent or foul or contaminated or cooling or hot water. The design of such treatment works shall be submitted to the Engineer for approval not less than one month before the commencement of the relevant works.

2.3.2 If any office, site canteen or toilet facilities is erected, foul water effluent shall be directed to a foul sewer or to a sewage treatment and disposal facility either directly or indirectly by means of pumping or other means approved by the Engineer. Prior written consent of the Engineer in consultation with the Director of Environmental Protection shall be obtained before connections are made.

3. NOISE CONTROL

3.1 Noise Control - General Requirements

3.1.1 The Contractor shall observe and comply with the Noise Control Ordinance and its subsidiary regulations.

3.1.2 The Contractor shall ensure that all plant and equipment to be used on the Site are properly maintained in good operating condition and noisy construction activities shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings or shields, acoustic sheds or screens or other means, to avoid disturbance to any nearby noise sensitive receivers.

- 3.1.3 For carrying out any construction work other than percussive piling during the time period from 0700 to 1900 hours on any day not being a general holiday (including Sundays), the Contractor shall comply with the following requirements:
- (a) The noise level measured at 1m from the most affected external facade of the nearby noise sensitive receivers from the construction works alone during any 30 minute period shall not exceed an equivalent sound level (Leq) of 75dB(A).
 - (b) The noise level measured at 1m from the most affected external facade of the nearby schools from the construction works alone during any 30 minute period shall not exceed an equivalent sound level (Leq) of 70 dB(A) [65 dB(A) during school examination periods]. The Contractor shall liaise with the schools and/or the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract.
 - (c) Should the limits stated in the above sub-clause (a) and (b) be exceeded, the construction shall stop and shall not re-commence until appropriate measures acceptable to the Engineer that are necessary for compliance have been implemented.
 - (d) The Contractor shall adopt, where necessary, the use of quiet construction equipment (QCE) and/or shall employ the quietest practicable working methods when carrying out demolition works, and/or road opening works during restricted hours.
- 3.1.4 Before the commencement of any work, the Engineer may require the methods of working, plant equipment and sound-reducing measures to be used on the Site to be made available for trial demonstration inspection and approval to ensure that they are suitable for the project.
- 3.1.5 The Contractor shall devise, arrange methods of working and carry out the Works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
- 3.1.6 Notwithstanding the requirements and limitations set out in Clause 3.1.3 above and subject to compliance with Clauses 3.1.2 and 3.1.5 above, the Engineer may upon application in writing by the Contractor, allow the use of equipment and the carrying out of any construction activities for any duration provided that the Engineer is satisfied with the application which, in the Engineer's opinion, is considered to be of absolute necessity and adequate noise insulation has been

provided to the schools to be affected, or of emergency nature, and not in contravention with the Noise Control Ordinance in any respect.

- 3.1.7 The Contractor shall, when necessary, apply for a construction noise permit in accordance with the Noise Control (General) Regulations prior to the commencement of the relevant part(s) of the works, display the permit as required and provide a copy to the Engineer.
- 3.1.8 Measures that are to be taken to protect adjacent schools and other adjacent noise sensitive receivers, if necessary, shall include, but not be limited to, adequate noise barriers. The barriers shall be of substantial construction and designed to reduce transmission of noise (simple plywood hoarding will not be sufficient). The barriers shall be surmounted with baffle boxes designed to reduce transmission of noise. The barriers shall be designed to BS 5228(1984). The location and details of the barriers shall be submitted to the Engineer for approval before works commence adjacent to schools and other noise sensitive receivers.
- 3.1.9 Any stoppage which may be ordered by the Engineer on account of failure to comply with sub-clauses 3.1.3 (a) & (b) and/or 3.1.7 above will not entitle the Contractor to any extension of time for completion or any compensation whatsoever.
- 3.1.10 Nothing in this Clause shall absolve the Contractor from his responsibility to comply with the provision of the relevant legal requirements.
- 3.1.11 For the purpose of the sub-clauses of this Clause, any domestic premises, hotel, hostel, temporary housing accommodation, hospital, medical clinic, educational institution, place of public worship, library, court of law, performing arts centre or office building shall be considered as a noise sensitive receiver.

4. AIR POLLUTION CONTROL

4.1 Air Pollution Control - General Requirements

- 4.1.1 The Contractor shall observe and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly the Air Pollution Control (Open Burning) Regulation and Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Smoke) Regulation.
- 4.1.2 The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of the Contractor's activities.

- 4.1.3 The Contractor shall ensure that there will be adequate water supply/storage for dust suppression.
- 4.1.4 The Contractor shall devise, arrange methods of working and carrying out the works in such a manner so as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
- 4.1.5 For better smoke control, the Contractor shall not use diesel hammer for percussive piling.
- 4.1.6 Before the commencement of any work, the Engineer may require the methods of working, plant, equipment and air pollution control system to be used on the site to be made available for inspection and approval to ensure that they are suitable for the project.

5. WASTE MANAGEMENT

5.1 General Requirement

- 5.1.1 The Contractor shall observe and comply with the Waste Disposal Ordinance and its subsidiary regulations.

5.2 Waste Minimisation

- 5.2.1 The Contractor shall minimise the generation of waste from the work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- 5.2.2 The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate.
- 5.2.3 The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc.
- 5.2.4 The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled and, as the last resort, disposal of at landfills.

- 5.2.5 The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites).
- 5.2.6 The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.
- 5.2.7 The Contractor shall provide training for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.

5.3 Waste Nuisance Control

- 5.3.1 The Contractor shall not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Site onto any adjoining land or allow any waste matter or refuse which is not part of the final product from waste processing plants to be deposited anywhere within the Site or onto any adjoining land. The Contractor shall arrange removal of such matter from the site or any building erected or to be erected thereon in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection.

5.4 Chemical Waste Control

- 5.4.1 The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation.
- 5.4.2 The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation.

